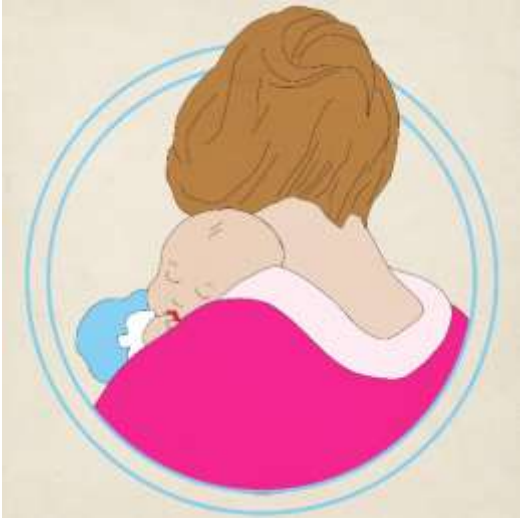
Pregnancy and Primary Care

Su Down

Nurse Consultant Diabetes

Somerset Partnership NHS Foundation Trust

Disclosures



- I have received funding from the following companies for either advisory boards, attendance at meetings or the delivery of educational meetings:
  - Sanofi
  - Novo Nordisk
  - Eli Lilly
  - Astra Zeneca
  - MSD
  - Boehringer Ingelheim
  - Bayer
  - Abbott
  - NAPP
  - Mylan
  - NB Medical

Background

35,000 women with either pre-existing or gestational diabetes give birth each year in the UK

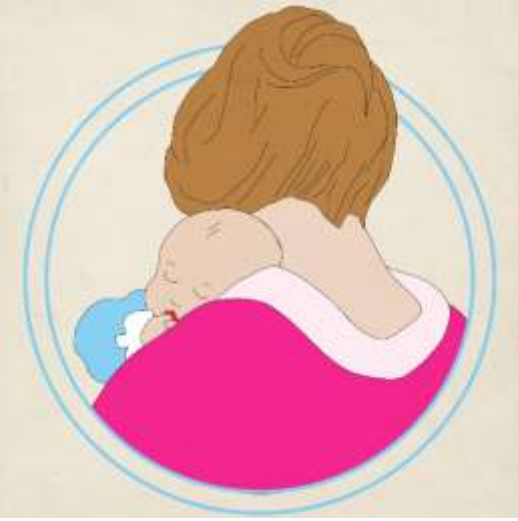
Pre-existing type 1	7.5%
Pre existing type 2	5.0%
Gestational diabetes	87.5%

The number of pregnancies complicated by diabetes increased significantly, by 44% in T1D and 90% in T2D over the 15 year period 1998-2013*

Women with T2D are likely to be managed solely in primary care.

*https://link.springer.com/article/10.1007/s00125-017-4529-3

Challenges



1

Increasing numbers of women with type 1 diabetes are not attending secondary care.

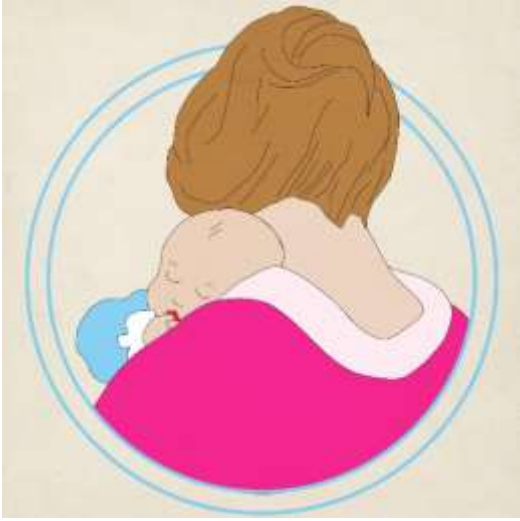
2

Increasing numbers of women of childbearing age have type 2 diabetes.

3

There is an increasing range of newer therapies to treat type 2 diabetes that are contraindicated for use in pregnancy.

Preconception planning…why do we need to consider it?



Unless well managed, women with diabetes face an increased risk of adverse outcomes, including:

- Miscarriage
- Congenital abnormalities
- Macrosomia
- Acceleration in present diabetes complications
- Pre-eclampsia
- Still birth
- Post natal adaptation problems

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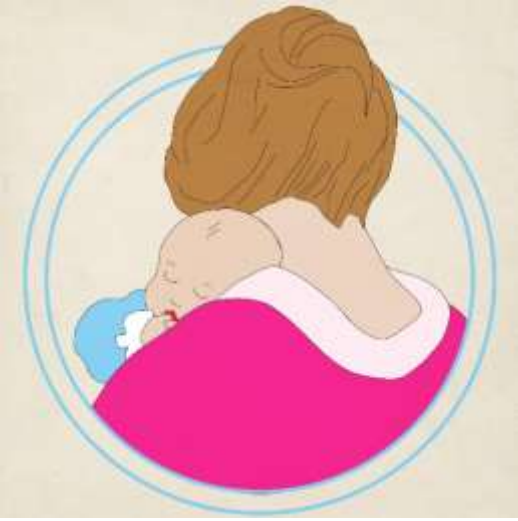
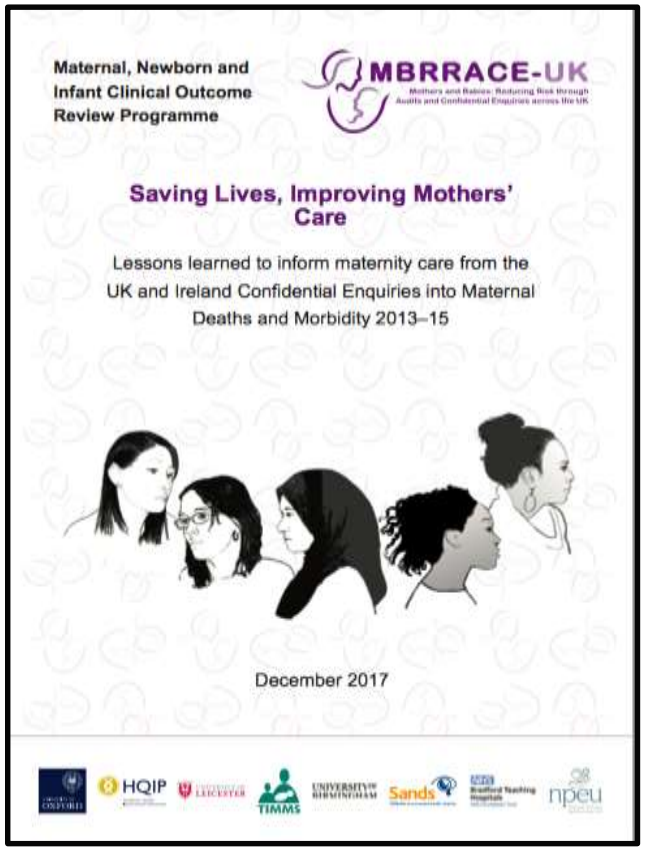
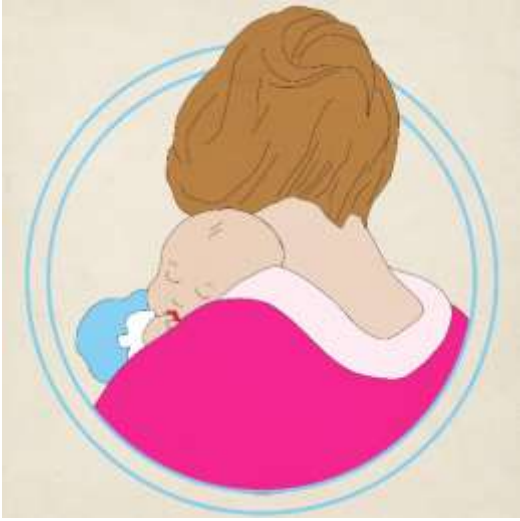
Who's responsibility?



"It is the responsibility of all professionals involved in the care of women of reproductive age with co-existing medical problems, whatever their professional background and medical specialty, to provide pre- or post-pregnancy advice and contraception".



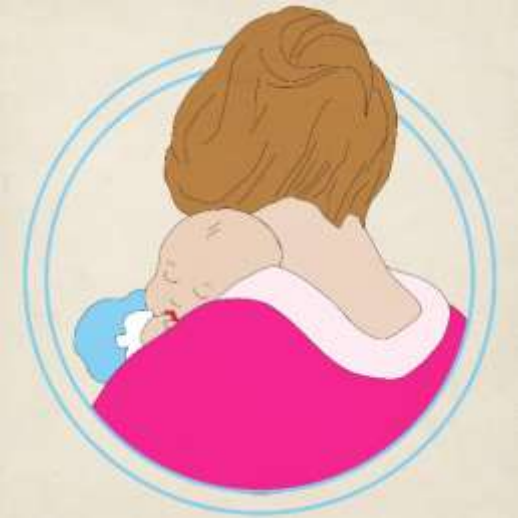
Think!

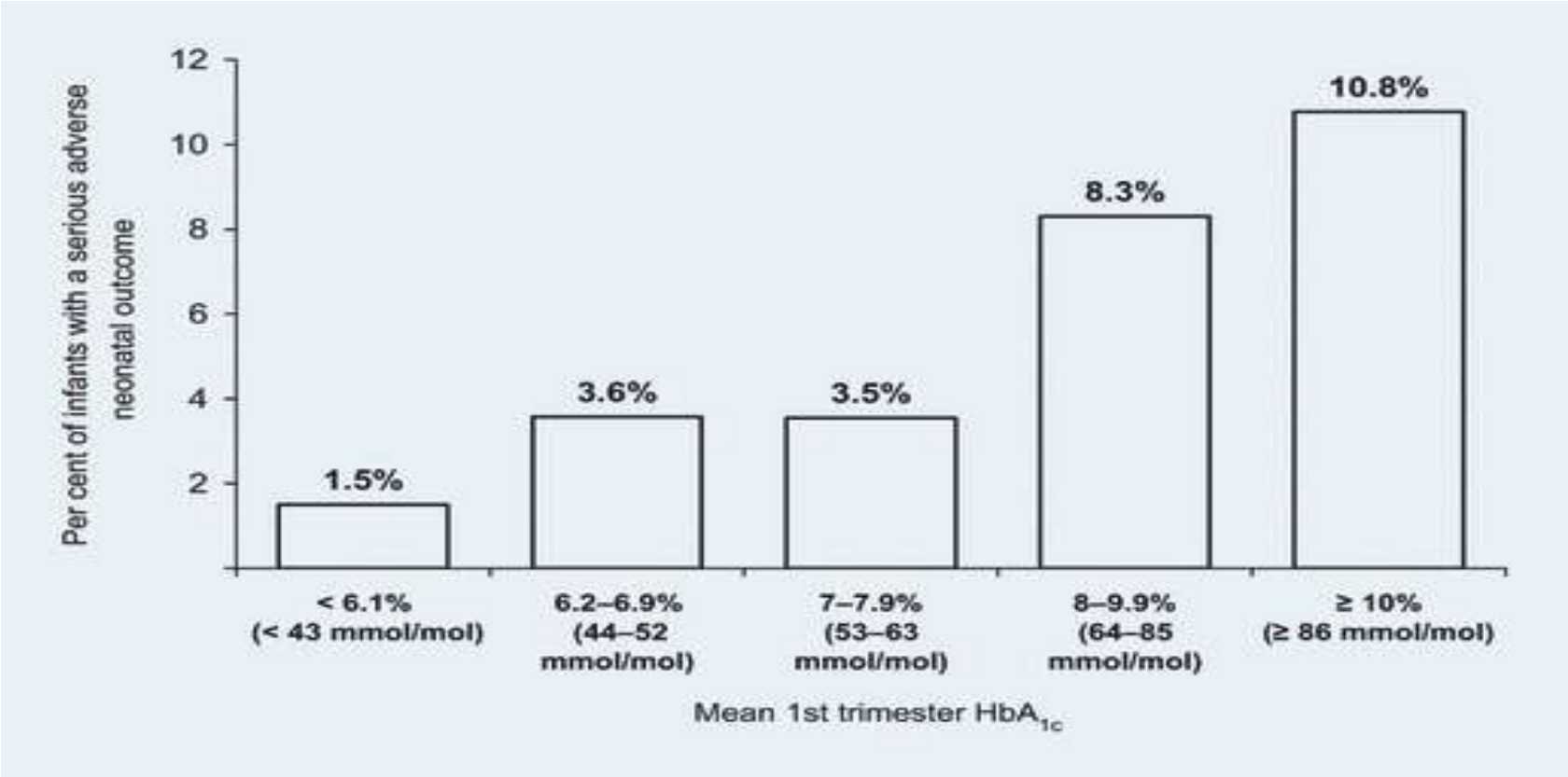


How many women with diabetes in your practice or on your caseload are of childbearing age?

- Are these women being given pregnancy planning advice at every contact?
- What glycaemic targets are you recommending pre-conceptually?
- What medications are safe to use in pre-conception and pregnancy?

HbA1c relationship to serious neonatal adverse outcomes



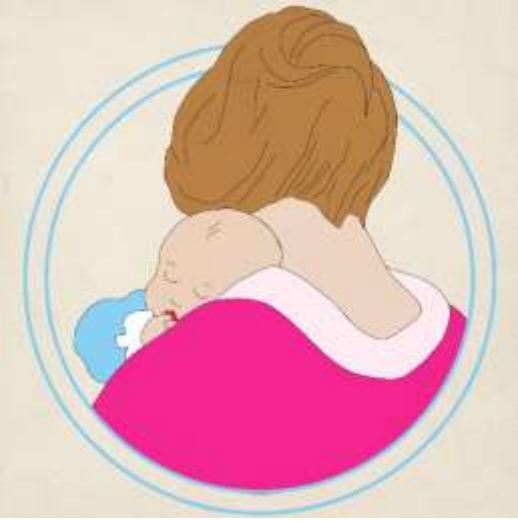


Development and evaluation of a standardized registry for diabetes in pregnancy using data from the Northern, North West and East Anglia regional audits.

Holman N[1], Lewis-Barned N, Bell R, Stephens H, Modder J, Gardosi J, Dornhorst A, Hillson R, Young B, Murphy HR; NHS Diabetes in Pregnancy Dataset Development Group.

https://www.ncbi.nlm.nih.gov/pubmed/21294773

HbA1c/Glycaemic targets



The HbA_{1c} target is <48 mmol/mol pre-conception if achievable without problematic hypoglycaemia [1].

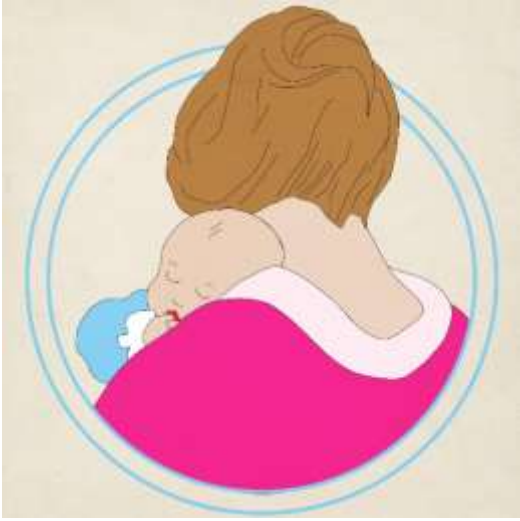
Women with HbA_{1c} >86 mmol/mol should NOT attempt to get pregnant because of the associated risks [1].

- **Any reduction towards an HbA_{1c} of 48 mmol/mol is beneficial [3].**

References

1. **NICE (2015) *Diabetes in pregnancy: management from preconception to the postnatal period*. NICE, London. Available at: www.nice.org.uk/guidance/ng3**
2. **Health and Social Care Information Centre (2014) *National Pregnancy in Diabetes Audit Report 2013*. HSCIC, Leeds. Available at: http://www.hscic.gov.uk/catalogue/PUB15491/nati-preg-in-diab-audi-rep-2013.pdf**
3. **Bell R, Glinianaia SV, Tennant PW et al (2012) Peri-conception hyperglycaemia and nephropathy are associated with risk of congenital anomaly in women with pre-existing diabetes: a population-based cohort study. *Diabetologia* 55: 936–47**

Pregnancy planning and pre-conception advice



Retinal screening

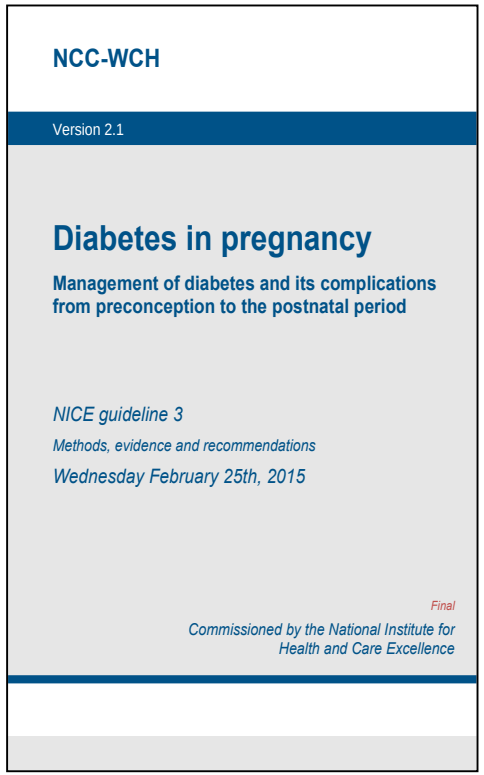
Retinopathy could develop or accelerate in pregnancy.

- Retinal screening before and during pregnancy is recommended.

Renal assessment

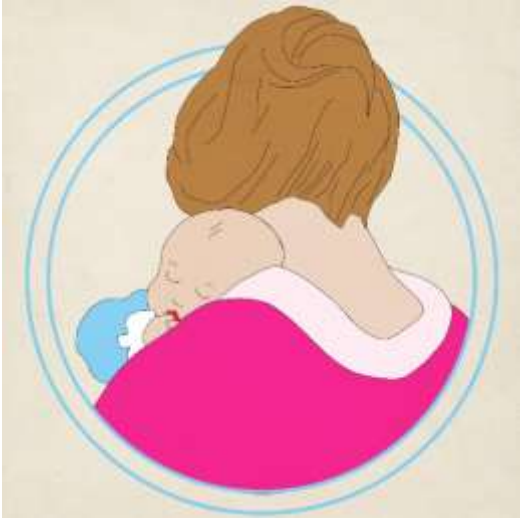
Refer to nephrologist if:

- Serum creatinine is ≥120 µmol/L.
- Urinary albumin:creatinine ratio (ACR) is >30 mg/mmol.
- Estimated glomerular filtration rate (eGFR) is <45 mL/min/1.73 m^2.



www.nice.org.uk/guidance/ng3

In the specialist pre conception service:



- Advice on injection technique and review of injection sites
- Commence Folic Acid at 5mgs daily, if not already started (continue to end of 12 weeks gestation)
- Monthly HbA1c
- Advice on hypoglycaemia treatment and warning signs (including driving advice)
- Advice on monitoring for ketones and increasing blood glucose monitoring

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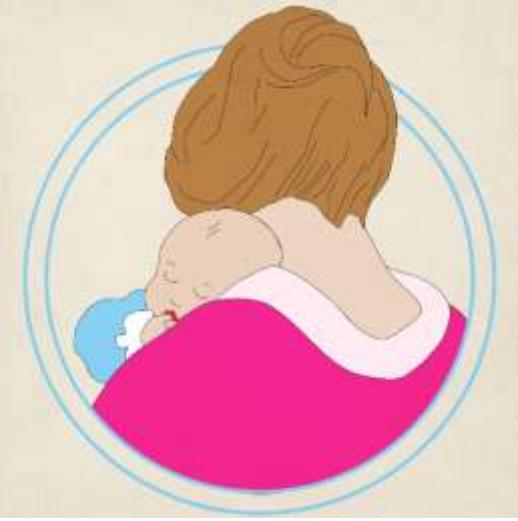
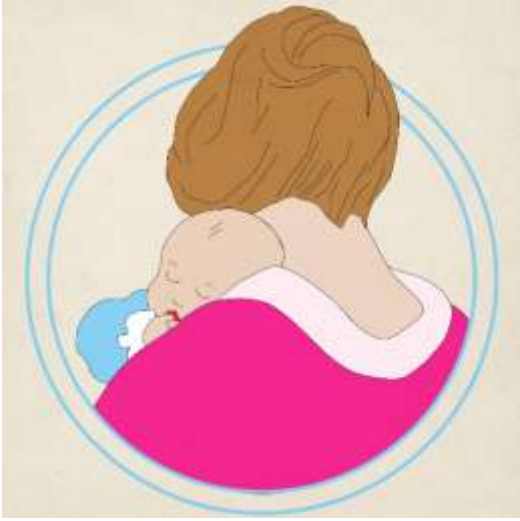
Challenges for the mother during the pregnancy



- Challenges of sudden glycaemic improvement
  - Retinopathy
  - Nephropathy

- Pre eclampsia
- Ketosis
- Loss of hypo warnings
- Many clinic attendances

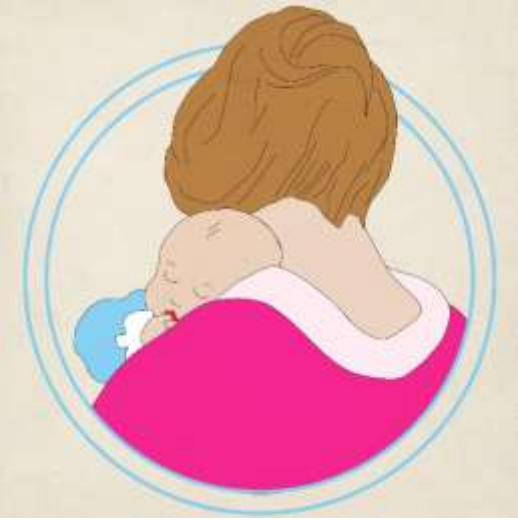
Why we need to encourage attendance to regular retinal screening



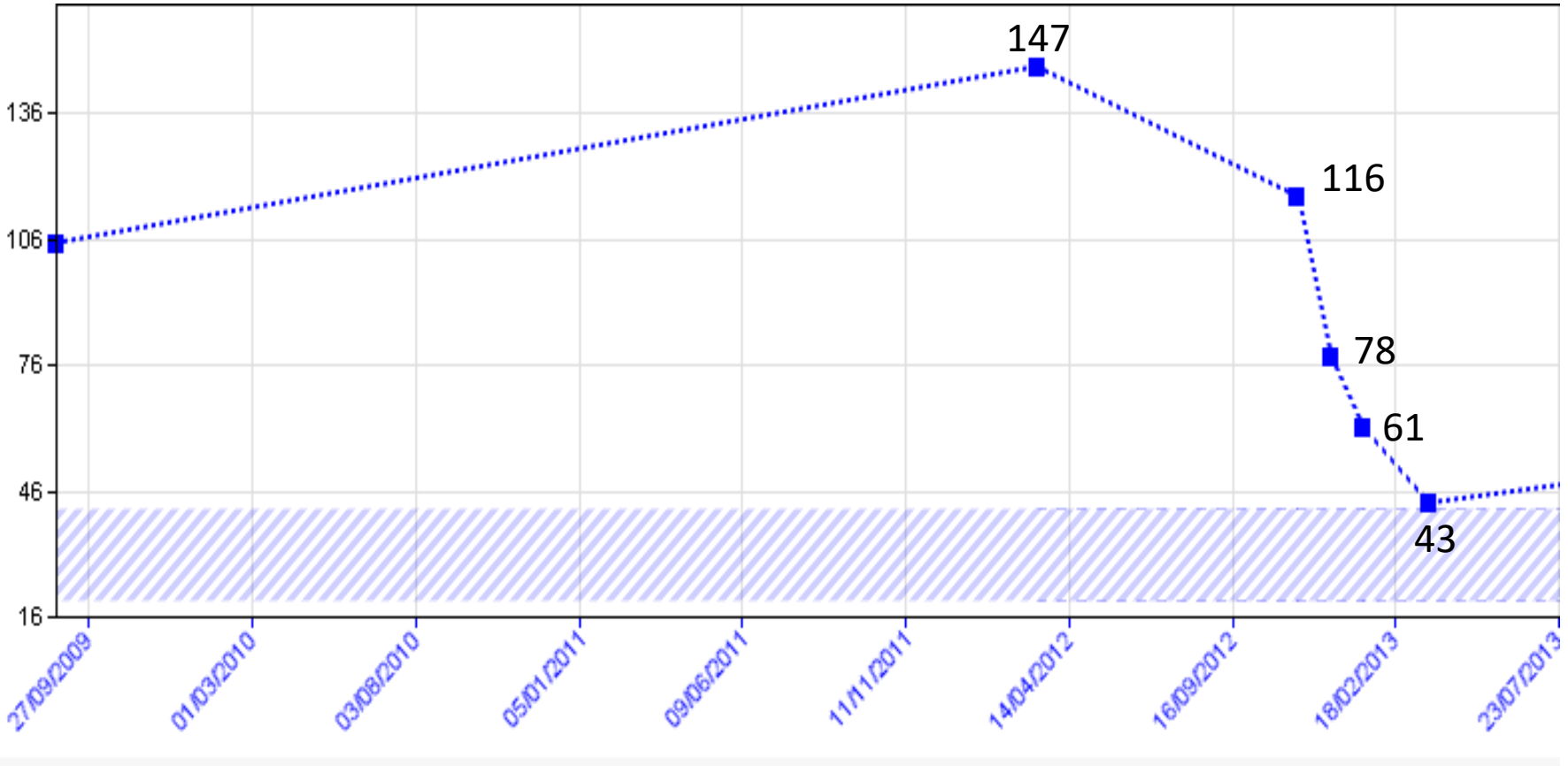
- *Pre Pregnancy advice*…. defer rapid optimisation of blood glucose control until after retinal assessment and treatment have been completed. [2008]

- *Ante natal advice…*retinopathy should not be considered a contraindication to rapid optimisation of blood glucose control in women who present with a high HbA1c [2008]

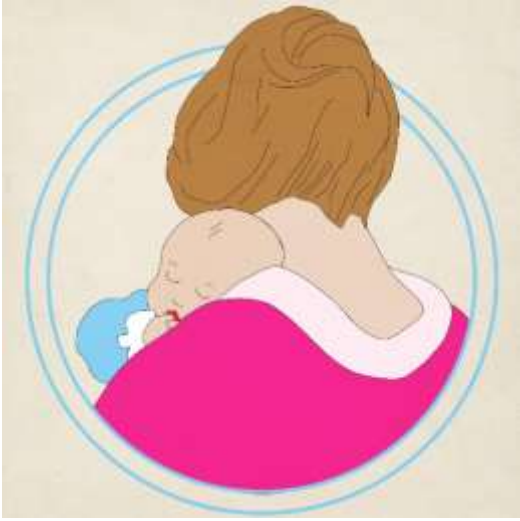
First contact with ante natal service at 5 weeks gestation



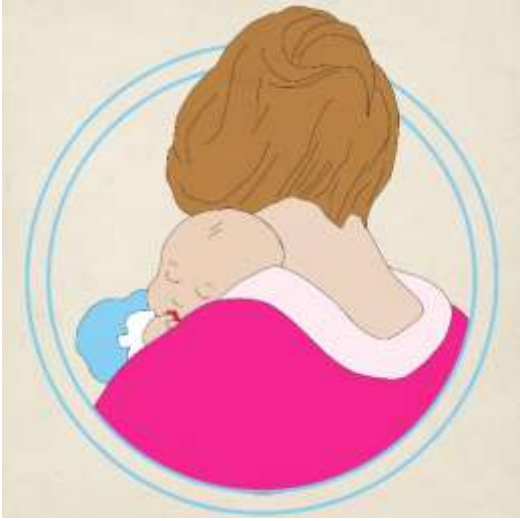
- HbA1c graph



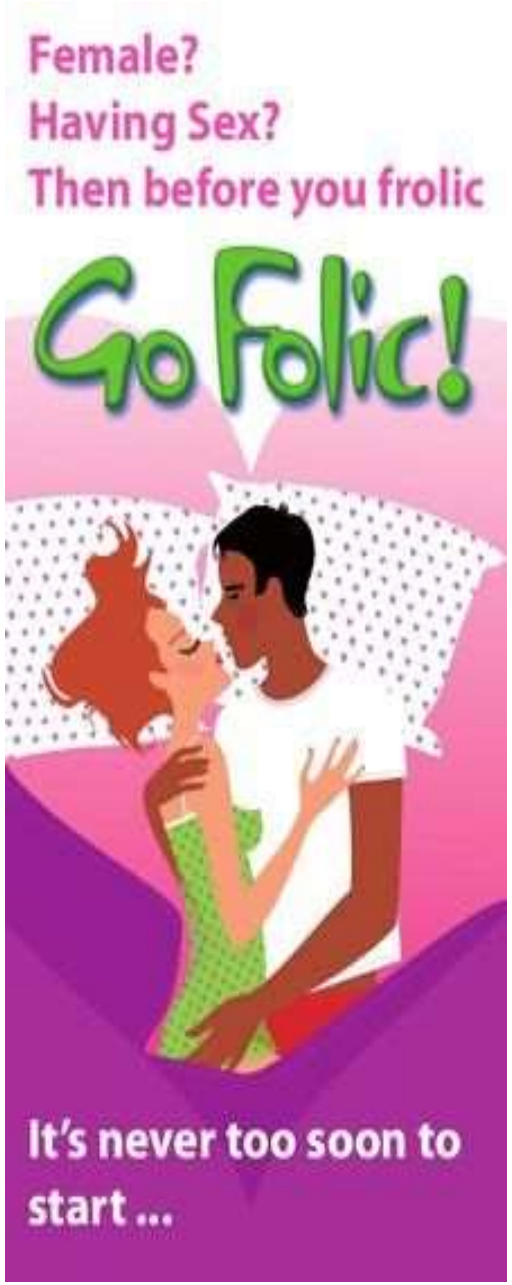
Result…



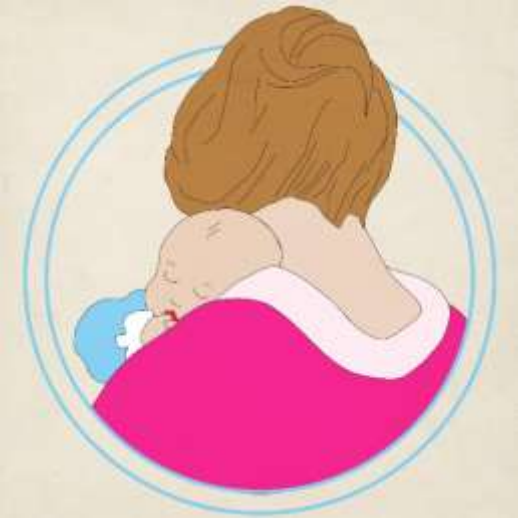
- During pregnancy with rapid improvement of HbA1c developed macular oedema
- Pre-eclampsia
- Emergency caesarean section performed at 35/40
- Bilateral vitreous haemorrhages - temporary blindness
- Post natal urgent bilateral vitrectomy performed some sight restored



Adjusting medication during the pregnancy

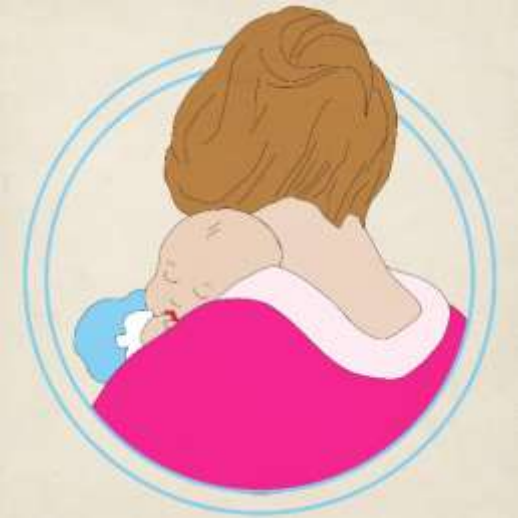


Folic Acid



- Only 46% of women with T1D and 23% of women with T2D were taking 5mg folic acid prior to pregnancy.
- Only 22.5% of women with T2D were taking the correct dose: **Prescription only 5mgs Folic Acid**
- Ideally at least 3 months prior to conception and up to the end of the 12th week of pregnancy

Medication review

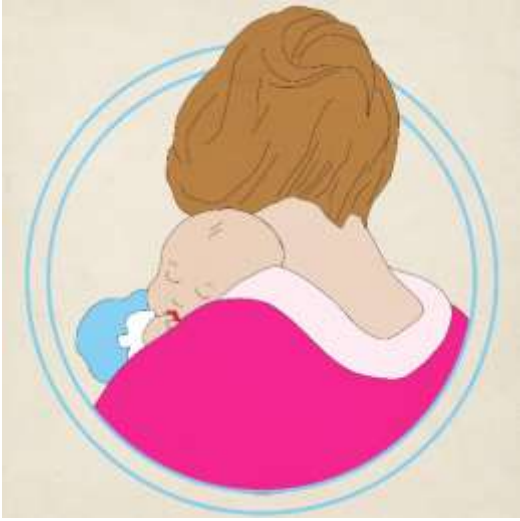


Teratogenic medications often used in diabetes:

- Angiotensin-converting enzyme (ACE) inhibitors.
- Angiotensin receptor blockers (ARBs).
- Statins.

STOP ALL OF THESE PRIOR TO CONCEPTION.

Important considerations



STOP HAZARDOUS MEDICATIONS

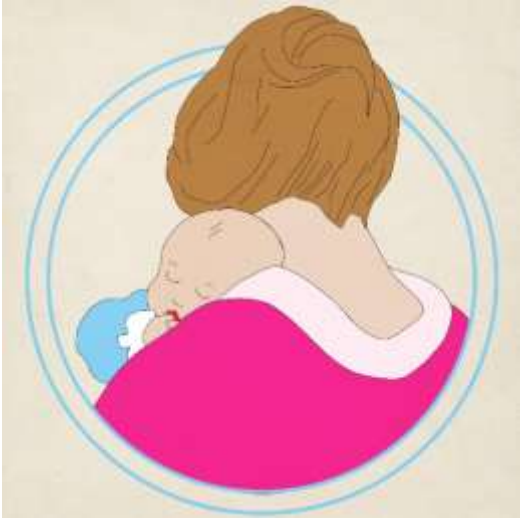
- 2.9% of women with T1D and 8.6% of women with T2D were taking either statins or an ACE inhibitor/ARB or both when they became pregnant.

HbA1c TARGET <48mmol/L

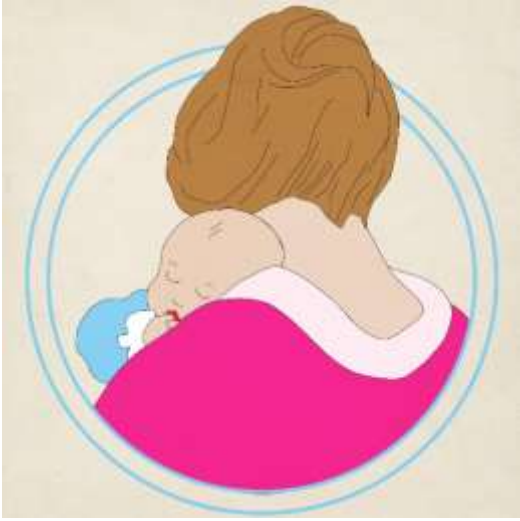
- Only 16% of women with T1D and 38% of women with T2D had a first trimester HbA1c below 48 mmol/mol.

http://www.hqip.org.uk/resources/summary-national-pregnancy-in-diabetes-2015/

Medication review

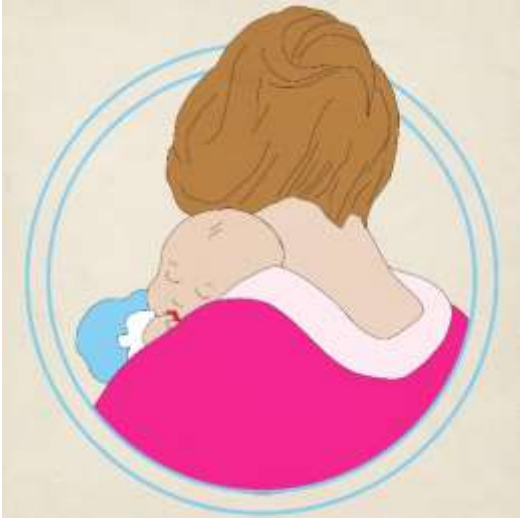


- Metformin is the only oral antidiabetes medication recommended by NICE during pre-conception and pregnancy (off-licence but strong evidence).
  - **Stop** all other oral/glucagon-like peptide-1 (GLP-1)-based antidiabetes medications. Some of these will need to be stopped 3 months prior to conception



What we need to do during the postpartum period

Postnatal care

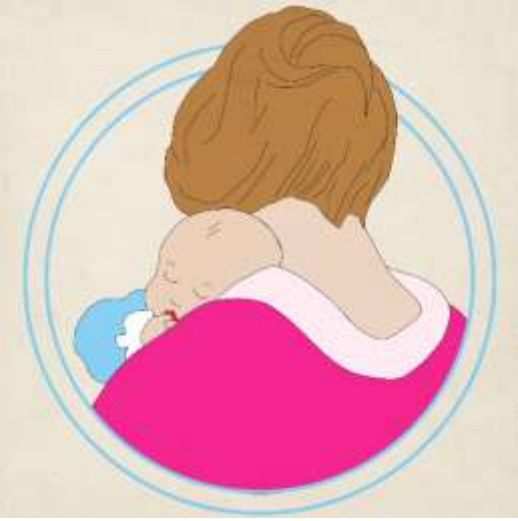


Postnatally, women with pre existing diabetes are at an increased risk of hypoglycaemia, especially if breastfeeding.

Therefore:

- If pre-existing insulin-treated diabetes: closely observe SMBG readings and adjust insulin doses accordingly. Reduced doses of at least 20% are likely to be required.
- Advise a meal or snack before or during breastfeeding.
- Metformin and glibenclamide can be used if breastfeeding, but no other diabetes medications, including those stopped in pre-pregnancy.
- If gestational diabetes: **stop all** blood glucose-lowering therapy immediately after birth (unless persistent hyperglycaemia).

Post natal care for women who have had gestational diabetes



- Primary care should be informed by the specialist team of every diagnosis of gestational diabetes
- Post natal test for diabetes at 6-13 weeks (fasting plasma glucose or HbA1c)
- Annual HbA1c if post natal test for diabetes negative
- Life style advice
- Advice regarding subsequent pregnancies

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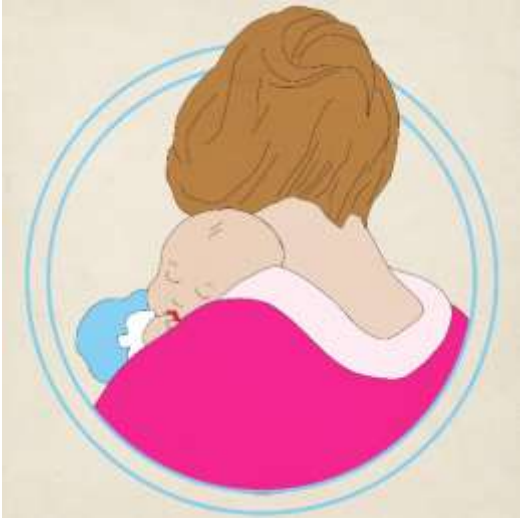
Postnatal care

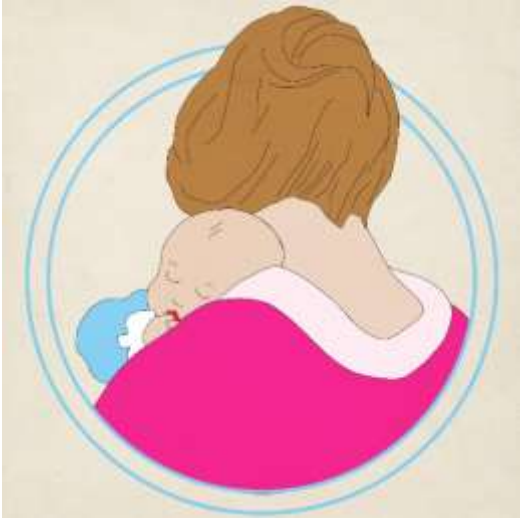


- **Encourage breastfeeding***

- Can reduce risk of progression to type 2 diabetes in women with gestational diabetes.
- Can reduce risk of progression to type 2 diabetes in later life for the baby.

***Gunderson EP (2007) Breastfeeding after gestational diabetes pregnancy: subsequent obesity and type 2 diabetes in women and their offspring. *Diabetes Care* 30(Suppl 2): S161–8. http://dx.doi.org/10.2337/dc07-s210**

In summary



- Consider the growing number of women with type 2 diabetes of child bearing age and the medications prescribed
- Consider that not all women of child bearing age with pre existing type 1 diabetes are looked after in secondary care clinics
- Consider the rapidly growing population of women diagnosed with gestational diabetes and the future care they need

- Thank you for listening